

Antilope annulipes, Aquetoun, native of *Gambia*; Bush-Goat, *English at Gambia*. Fur pale yellowish brown; orbits, lips, chin, base of the ears, chest and beneath, the inner parts of the fore legs and thighs, and a band over the hoofs white; inside of the ears, the fetlock, and a streak up the front of the fore and hind legs, and the front of the fore leg above the knee black; end of tail blackish; throat yellowish; legs slender, elongate; male horns thick, sublyrate, black, with strong knobs in front; female similar, hornless.

Hab. Western Africa, Mr. Whitfield. In the menagerie of the Earl of Derby.

Antilope Scripta, Pallas. Back with a compressed ridge of blackish hair in both sexes. The male with a high compressed ridge of long loose white hairs, extending the whole length of the back and tail.

Hab. Western Africa.

Cephalophorus Ogilbyii, *Antilope Ogilbyii*, *Waterhouse*. Splendid golden brown, beneath paler; face, ears, back of the neck with scattered black rigid hairs, which are crowded together and form a broad dorsal line; feet above the hoofs and the front part of the legs blackish; horns short, conic, thick at the base, with five or six irregular cross ridges.

Hab. Fernando Po, Th. Thomson, Esq., R.N.

Capra (Ibex) Warryato,—*Warryato* or Hill Goat of the Tamooleans, *Hardw. MSS. Icon. ined. (B.M. n. 10, 975.) t. 192, sketch improved from former by Colonel Hamilton Smith, t. 193.* Head dark brown, slightly grised with yellowish; horns short, bent back with close cross rings; the outer side rounded, the inner strongly keeled in front; the horn of the females smaller but similar.

Hab. India, Hardwicke. Nepal, Mr. Partridge.

Head and horns of both sexes in the Museum, presented by R. Partridge, Esq.

XXXVIII.—*Excerpta Botanica, or abridged Extracts translated from the Foreign Journals, illustrative of, or connected with, the Botany of Great Britain.* By W. A. LEIGHTON, Esq., B.A., F.B.S.E., &c.

No. 11. *On the Structure of the Nucleus of the genera Sphærophoron of the Family of the Lichenes, and Lichina of that of the Byssaceæ.* By CAMILLE MONTAGNE, M.D. (*Ann. des Sc. Nat. n. s. xv. p. 147.*)

THE apothecium of *Sphærophoron* is at first only a simple ellipsoid swelling of the extremity of a branch. If at this period this be divided longitudinally, the cavity occupied by the nucleus is observed to have a sigmoid form. This is owing to a hemispherical projection of the medullary or central layer of the thallus, representing a sort of torus, from

all points of which the sporidigerous tubes or thecæ diverge. Already is the upper part of the sporangium filled with that scobiform substance altogether different from the sporidia, and of a beautiful indigo-blue by transmitted light, but of an opaque black *en masse*, which finally tinges the thecæ and sporidia of a similar but less deep tint. The cavity gradually enlarges, not only from the swelling of the extremity of the branch, but also from the insensible shrinking of the interior projection formed by the medullary layer of the thallus.

The nucleus contained in the apothecium differs very slightly from that of other Lichens. It is composed of erect filaments pressed against each other, precisely as in the proligerous lamina of a *Lecidea*, and united by the intervention of a mucilaginous substance which greedily absorbs water. These tubular filaments, open at their free extremity, have exactly the form of the asci or utricules of a *Peziza*. They are linear, obtuse at the summit, and attenuated into a short pedicel at the base, which seems to be the continuation of the filaments of the medullary layer. In their young state they are perfectly transparent, and contain an opaline humour, in which at a later period appear hyaline globules, which are hence only visible on moving the diaphragm of the microscope. Gradually these filaments, which can be considered as no other than the true thecæ, assume a bluish tint, which becomes more intense with age, but which, nevertheless, never loses its blue tinge when viewed by transmitted light.

The sporidia also become more and more apparent in the thecæ, being globose or oblong, and arranged in a single series. On the final rupturing of the theca they are set free and become mingled with that mass of black powder, from which however they are clearly distinct, and whose origin it is very difficult to determine, because it exists in the very earliest period of the formation of the apothecium.

The theca is from the 500th to 600th of a millimetre long, and 200th of a millimetre in diameter. The sporidium, either entirely spherical or slightly longer than broad, attains when set free a diameter of 100th of a millimetre, and is bounded by a hyaline margin and coloured blue similar to the thecæ.

I cannot assert that paraphyses do not exist in it, but if they do, we are unable to distinguish them from the true thecæ, except by their transparence and the absence of sporidia in their tube, and every one is aware that these organs are only abortive thecæ.

These observations were made on a specimen of *Sphaerophoron coralloides* collected by myself in the Vosges.

Among the closed *Phyceæ* this genus has for its analogue

Thamnophora, among the *Byssaceæ*, *Lichina*, and among the *Hypoxyleæ*, *Thamnomycetes*; note however that I say *genera analoga, non autem affinia*.

The typical plant of the genus *Lichina*, first observed by Micheli, was considered by him as a lichen. Linnæus, and all succeeding botanists, including Agardh, the founder of the genus, have arranged it among the *Phyceæ*; not however unanimously, for Acharius considers the second species of the genus, *L. confinis*, Ag. (regarded as a variety only by Turner and Hooker), as a lichen, and refers it to the *Sphærophoron*. In 1825 Fries established under the name *Byssaceæ* a family intermediate between *Lichenes* and *Phyceæ*, and included in it *L. confinis*, regarding *L. pygmæa* as a true *Hydrophycea*. Fries recognises the affinities of *Lichina* with *Collana*, near which he arranges it, and especially its resemblance to his own genus *Synalyssa*.

But the two species cannot be separated nor placed in distinct families; for though their true nature be ambiguous, and their systematic place necessarily uncertain, we can assert that they possess the frond of the *Fucaceæ* and the fructifications of Lichens.

Turner, Lyngbye and Agardh, either through the imperfection of their instruments, or from other causes, have not obtained right views of the fructification. Greville's description and figure (*Algæ Brit.* p. 21, and *Scot. Crypt. Fl.* t. 219. fig. 7.) are founded on a *horizontal* section of the fructification.

A thin longitudinal section of the mature apothecium of *Lichina pygmæa*, viewed with a power of 600 diameters, shows that the mucilaginous nucleus (*lanina prolifera*) is composed of extremely delicate, erect, flexuose filaments recurved and crisped at their superior or free extremity. Their diameter is at most $\frac{1}{800}$ th of a millimetre, and their length varies between $\frac{1}{10}$ th and $\frac{1}{15}$ th of a millimetre. They are slightly swollen at the summit, which is bent and somewhat recurved. In the midst of these filaments we easily see the long thecæ or utricles in different stages of development. The shorter ones contain only in the centre a shapeless greenish sporaceous mass extending through nearly the whole length of the tube. Others already enclose the sporidia, though their form is as yet ill-defined. Others still more numerous exhibit these sporidia in their perfect state. I presume that on their first formation they are ranged in single series, but later some of them are placed two and two, and thus render the theca distended in the part occupied by them. These thecæ are shorter than the filaments in the midst of which they are situated;

their form is linear, slightly attenuated towards the base; their very delicate membrane is in due time ruptured, and the sporidia escape as in many *Lichenes* and *Hypoxylea*. The sporidia, in number ordinarily eight, are of an elliptical or oblong form, their length being $\frac{1\frac{1}{2}}{500}$ ths, or nearly 300ths, and their width a little more than 100th of a millimetre. They generally contain a greenish cellular substance, and are surrounded by a very marked transparent margin. Sometimes they are empty and pellucid, only marked with a longitudinal plait. These facts, which are easily verified, have been observed in a specimen of *L. pygmæa* gathered by myself on the shores of Brittany.

The organization of the nucleus of *L. confinis* differs in no other respect than in the dimensions of the parts, which is worthy of attention, as the plant is one half smaller. The filaments, thecæ and sporidia are similar in form as in *L. pygmæa*. The sporidia alone have this remarkable peculiarity, that, being one-third shorter than those of *pygmæa*, they still are equal in width, which renders them nearly spherical. In a young state, on a specimen collected by M. Durieu at Gijon, on the coasts of Spain, they are slightly longer than broad, entirely pellucid, pressed together and longitudinally plaited, although always marked with a margin. In an older state they are turgid, filled with an utricular mass, and nearly globose. This, which I presume is the adult state, is seen on a specimen collected on the coast of Normandy by M. Lenormand.

Hence it is evident that *Lichina* (comprising the two species *pygmæa* and *confinis*) must be removed from the *Phyceæ* and arranged in the tribe *Collanaceæ*, near the genus *Synalyssa* in the family *Byssaceæ*, or at all events among the Lichens, in case we do not admit Fries's intermediate family of the *Byssaceæ*.

As the genus *Lichina* contains only these two species there will be little difficulty in distinguishing them, but the generic characters must be modified as follows:—

Apothecia terminalia, primo globosa, poroque simplici pertusa, demum scutellato-urceolata, nucleum gelatinoso-filamentosum hyalinum foventia. Asci erecti ampli, lineari-clavati, sporidia oblongo-elliptica suboctona serie unica disposita continentes, paraphysibus tenuissimis apice crispulo-incurvis stipati.

Thallus cartilagineus, dichotomo-ramosus, teres vel plano-compressus, olivaceo-nigrescens.